

# PATENT SPECIFICATION

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## COMPLETE SPECIFICATION

### Method for the Production of Structural Members of any Cross or Longitudinal Section provided with Hollow Spaces

I, PIUS STEBLER, a Swiss National, of Nunningen, Switzerland, trading as the firm STEBLER-SANER, METALLWARENFABRIK, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

Structural members of any cross or longitudinal section and provided with hollow spaces are known which are composed of tension plates and intermediate supporting sections interconnected by gluing, riveting or welding. The joining of more than two such tension plates with intermediate supporting members is practically impossible because the closed construction does not allow the introduction of rivets or the application of a welding apparatus.

The present invention provides a method for the production of structural members of the kind mentioned, wherein between two such tension plates arranged parallel to each other is a supporting member having swellings or mammillations on each side, each such swelling or mammillation having a plane crest parallel to the median plane of said member and said crests being joined to the respective tension plate by means of self-hardening synthetic resin under a relatively low applied pressure.

Any desired number of supporting members and tension plates can be arranged, superposed according to the forces and pressures which have to be transmitted. The overall cross-sections of the structural member may vary to take into consideration the static and aerodynamic conditions to be encountered in use. The individual hollow spaces in the structural members have an insulating effect.

According to another feature of the invention, it is suggested that the supporting members and/or the tension plates may be made of a different material or of different

materials, e.g. sheet metal, impregnated paper, or synthetic materials, so that differences in tension are compensated or produced to meet requirements for different uses.

Furthermore, the inner supporting members and/or tension plates are, according to the invention, of latticed construction. This is particularly advantageous to obtain a heat current passage.

Another modification of the invention is to construct both the outer tension plates in the form of grids, that is latticed, so as to do away with the necessity for a plaster carrier when the structural member is used for walls or ceilings.

It is particularly advantageous to weld additionally pre-stressed wires between the tension plates and supporting members. The ultimate strength values of the structural members are considerably increased in this manner.

An embodiment of the invention is illustrated diagrammatically by way of example in the only Figure of the accompanying drawing.

The tension plates 1, 1', 1'', 1''' consist of any flat material, according to the stresses which have to be borne or the particular purpose of use. The supporting members 2, 2', 2'' are constructional elements mammillated on both sides, the height of the mammillations or warts being preferably uniform, and their crests having plane surfaces parallel to the median plane of the member. The mammillations or swellings are preferably staggered in adjacent rows. As shown the supporting member is made up wholly of the swellings or mammillations. The points or crests of the swellings 4, 4' can have surfaces of any shape, round, square, triangular or the like. The same applies to the walls of the swellings 5, 5', 5''. As can be seen from the drawing, each supporting member is always joined to two

tension plates. This is effected by joining with the aid of self-hardening synthetic resin using the low-pressure or contact process, in which a pressure of say one atmosphere is sufficient during the hardening of the resin.

*What I claim is :—*

1. The method of producing structural elements comprising parallel tension plates and intermediate supporting members secured thereto providing hollow spaces between said plates, wherein between two such tension plates arranged parallel to each other is a supporting member having swellings or mammillations on each side, each such swelling or mammillation having a plane crest parallel to the median plane of said member and said crests being joined to the respective tension plate by means of self-hardening synthetic resin under a relatively low applied pressure.

2. The method of claim 1, wherein said swellings or mammillations are in rows, those in each row being staggered with respect to those in the adjacent row or rows.

3. The method of claim 1 or 2, wherein the supporting member is made up wholly of said swellings or mammillations.

4. The method of claim 1, 2 or 3, characterised in that the supporting members and the tension plates are of different materials.

5. The method of any preceding claim, characterised in that the supporting member and/or tension plates is or are latticed.

6. The method of any preceding claim, characterised in that pre-stressed wires are welded between the tension plates and supporting member.

7. The method of any preceding claim wherein more than two tension plates are provided in a structural element, with a supporting member as set forth between each two adjacent plates.

8. A structural element produced by a method according to any of the preceding claims.

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COMPLETE SPECIFICATION

1 SHEET

*This drawing is a reproduction of  
the Original on a reduced scale.*

